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UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/089,158	03/27/2002	Masayuki Kataoka	220575US2PCT	9781

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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER
FOX, BRYAN J

ART UNIT	PAPER NUMBER
2686	

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Please find below and/or attached an Office communication concerning this application or proceeding.

/

PTO 90C (Rev 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/089,158	KATAOKA, MASAYUKI
	Examiner	Art Unit	
	Bryan J Fox	2686	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE **3** MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date *20020327*.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Specification

The abstract of the disclosure is objected to because it is longer than 150 words.

Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Korpela

et al (US006751460B2) in view of Corbett et al (US006473624B1).

Regarding claim 1, Korpela et al discloses a method for performing a cell

reselection in a system comprised of a hierarchy of cells, wherein cells of one layer of

the hierarchy have a size that differs from cells of another layer of the hierarchy (see

column 3, lines 12-26), which reads on the claimed "communication traffic control

system for a mobile communications system, in which communication traffic occurring in

a macro cell and a micro cell is controlled". This system includes a plurality of base

transceiver stations (BTS) 5 that transmits a forward or downlink direction both physical

and logical channels to the mobile stations 10 (see column 3, line 55 – column 4, line 8)

and different hierarchical levels of different sizes (see column 4, line 66 – column 5, line

8), which reads on the claimed "macro base station communicating with mobile stations

in the macro cell having a relatively large coverage area" and "micro cell base station

communicating with mobile stations in the micro cell having a relatively small coverage

area in the macro cell". The system also includes at least one base station controller

(BSC) 4, which reads on the claimed "macro cell base station controller managing said

macro cell base station" and "micro cell base station controller managing said micro cell

base station", and a mobile switching center 3 (see column 3, line 55 – column 4, line 8

and figure 1), which reads on the claimed "mobile service switching center providing

circuit switching service for said macro cell base station controller and said micro cell

base station controller". When the cell reselection criteria Sn>0, and

Qn>Qs+Qoffset+Qhyst are fulfilled within timer Treselction the UE 10 makes the cell

reselection (see column 5, lines 29-42), which reads on the claimed invention where

those mobile stations, communicating with said macro cell base station with a relatively

poor communication quality and served for a service time shorter than a preset

threshold service time are subjected to an action. Korpela et al fails to expressly

disclose the use of diversity.

In a similar field of endeavor, Corbett et al discloses diversity handover

communication in a microcell/macro cell case (see column 9, lines 42-61).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Korpela et al with Corbett et al in order to take advantage of the benefits of diversity handover such as reduced risk of dropped calls, no interruption in speech upon handover and increased gain in downlink signal-to-noise ratio as suggested by Corbett et al (see column 1, line 65 – column 2, line 3).

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Korpela et al and Corbett et al as applied to claim 1 above, and further in view of Tsushuinmo (JP 2000023238 A).

Regarding claim 2, the combination of Korpela et al and Corbett et al discloses that use of traveling speed in decisions about handover (see Korpela et al column 6, lines 19-22). The combination of Korpela et al and Corbett et al fails to disclose increasing the power of a micro cell base station in response to exceeding a speed threshold.

In a similar field of endeavor, Tsushinmo discloses a system where if the velocity of mobile station exceeds a maximum velocity, the power of a base station is increased (see abstract).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Korpela et al and Corbett et al with Tsushinmo to include the above increasing the power of a base station if the velocity is greater than a threshold in order to reduce the size of the mobile terminal as suggested by Tsushinmo (see advantage).

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Korpela et al in view of Corbett et al as applied to claim 1 above, and further in view of Salonaho (WO 97/39599).

Regarding claim 3, the combination of Korpela et al and Corbett et al discloses diversity handover in a macro/micro cell system (see Corbett et al column 9, lines 42-61). The combination of Korpela et al and Corbett et al fails to teach blocking a branch into macro cell base station if a traveling speed is less than a threshold.

In a similar field of endeavor, Salonaho discloses a system where only the fastest mobile stations are handed over to the macrocell M, which reads on the claimed invention where the mobile stations traveling at a relative traveling speed lower than a preset threshold relative traveling speed, a branch into said macro cell base station is blocked.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Korpela et al and Corbett et al with Salonaho to include the above use of traveling speed in order to make a fast handover decision as suggested by Salonaho (see page 4, lines 24-25).

Regarding claim 4, the combination of Korpela et al, Corbett et al discloses diversity handover in a macro/micro cell system (see Corbett et al column 9, lines 42-61) and the use of traveling speed in decisions about handover (see Korpela et al column 6, lines 19-22). The combination of Korpela et al and Corbett et al fails to expressly disclose resuming diversity when the traveling speed is above a threshold.

In a similar field of endeavor, Salonaho discloses that only the slowest mobile

stations in the macro cell are handed over to the microcell (see page 9, lines 5-23).

Therefore the mobile stations whose velocities are above the threshold would still be

still be subjected to the diversity handover discussed above (see rejection of claim 1).

It would have been obvious to a person of ordinary skill in the art at the time of

the invention to modify the combination of Korpela et al and Corbett et al with Salonaho

such that diversity handover is resumed when the speed is above a threshold in order to

balance the loading of the macro and micro stations as suggested by Salonaho (see

page 9, lines 5-23).

Claims 5-7 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Korpela et al, Corbett et al and Tsushinmo as applied to claim 2 above, and further in

view of Salonaho.

Regarding claim 5, the combination of Korpela et al, Corbett et al and Tsushinmo

discloses the use of a time threshold Treselection (see Korpela et al column 5, lines 29-

50), which reads on the claimed "preset threshold service time" and a speed threshold

(see Korpela et al column 6, lines 16-22), which reads on the claimed "preset threshold

relative traveling speed". The transmit power controller in each base station regularly

forwards to the radio network controller 50 periodic measurement report including a

radio link transmit power level from the base station and a signal quality indicator from

the mobile station (see Corbett et al column 6, lines 49-67), which reads on the claimed

"user environment data, obtained by measurement by said macro cell base station and

said mobile station". A difference is calculated between the reference power level and

the current transmit power level (see Corbett et al column 7, lines 1-11), which reads on

the claimed "generating compressed difference data by item-by-item computation of a

difference between each data item of user environment data". Each base station then

calculates an associated correction step delta using the corresponding power level

difference determined for that base station (see Corbett et al column 8, lines 18-29),

which reads on the claimed "compute difference multi-dimensional aggregation data".

The RNC adopts as the reference power level the average transmit power of the

dominant base station, thus updating reference values (see Corbett et al column 8, lines

49-54). The combination of Korpela et al, Corbett et al and Tsushinmo fails to expressly

disclose that the process is performed so as to ensure that a minimum bandwidth is

allocated to all the mobile stations.

In a similar field of endeavor, Salonaho discloses a system where thresholds are

adjusted in order that the network would not be blocked by handovers (see page 8, lines

12-30), which reads on the claimed "ensure that a minimum bandwidth is allocated to all

the mobile stations in the macro cell".

It would have been obvious to a person of ordinary skill in the art at the time of

the invention to modify the combination of Korpela et al, Corbett et al and Tsushinmo

with Salonaho to include the above threshold adjustments in order to increase network

performance by decreasing blocking. The combination of Korpela et al, Corbett et al,

Tsushinmo and Salonaho fails to teach computations occurring in the MSC. Where

computations occur is not critical to the invention and the examiner takes official notice

that having computations occur in the MSC was well known in the art. It would have

been obvious to a person of ordinary skill in the art at the time of the invention to modify

the combination of Korpela et al, Corbett et al, Tsushinmo, and Salonaho so that

computations occur in the MSC in order to free up processing power at lower levels.

Regarding claim 6, the combination of Korpela et al, Corbett et al, Tsushinmo

and Salonaho discloses that the transmit power controller in each base station regularly

forwards to the radio network controller 50 periodic measurement report including a

radio link transmit power level from the base station and a signal quality indicator from

the mobile station (see Corbett et al column 6, lines 49-67), which reads on the claimed

"when said aggregation process unit receives the user environment data, said automatic

difference data multi-dimensional aggregation statement generation and execution unit

automatically generates and executes a statement that causes communication to be

established between said macro cell base station and said operation and management

center". A difference is calculated between the reference power level and the current

transmit power level (see Corbett et al column 7, lines 1-11), which reads on the

claimed "said aggregation process unit to generate compressed difference data, based

on the user environment data, and to compute difference multi-dimensional aggregation

data by performing a multi-dimensional aggregation process on the compressed

difference data thus generated". The RNC adopts as the reference power level the

average transmit power of the dominant base station, thus updating reference values

(see Corbett et al column 8, lines 49-54), which reads on the claimed "the automatic

reverse data load program generation and execution unit automatically generates a

statement for loading the updated [presets]". The use of a time threshold Treselection

(see Korpela et al column 5, lines 29-50), which reads on the claimed "preset threshold

service time" and a speed threshold (see Korpela et al column 6, lines 16-22), which

reads on the claimed "preset threshold relative traveling speed" is also disclosed. The

combination of Korpela et al, Corbett et al, Tsushinmo and Salonaho discloses a system

where thresholds are adjusted in order that the network would not be blocked by

handovers (see Salonaho page 8, lines 12-30), which reads on the claimed "ensure that

a minimum bandwidth is allocated to all the mobile stations in the macro cell".

The combination of Korpela et al, Corbett et al, Tsushinmo and Salonaho fails to

teach computations occurring in the MSC. Where computations occur is not critical to

the invention and the examiner takes official notice that having computations occur in

the MSC was well known in the art. It would have been obvious to a person of ordinary

skill in the art at the time of the invention to modify the combination of Korpela et al,

Corbett et al, Tsushinmo, and Salonaho so that computations occur in the MSC in order

to free up processing power at lower levels.

Regarding claim 7, Korpela et al discloses a method for performing a cell

reselection in a system comprised of a hierarchy of cells, wherein cells of one layer of

the hierarchy have a size that differs from cells of another layer of the hierarchy (see

column 3, lines 12-26), which reads on the claimed "communication traffic control

system for a mobile communications system, in which communication traffic occurring in

a macro cell and a micro cell is controlled". This system includes a plurality of base

transceiver stations (BTS) 5 that transmits a forward or downlink direction both physical

and logical channels to the mobile stations 10 (see column 3, line 55 – column 4, line 8) and different hierarchical levels of different sizes (see column 4, line 66 – column 5, line 8), which reads on the claimed "macro base station communicating with mobile stations in the macro cell having a relatively large coverage area" and "micro cell base station communicating with mobile stations in the micro cell having a relatively small coverage area in the macro cell". The system also includes at least one base station controller (BSC) 4, which reads on the claimed "macro cell base station controller managing said macro cell base station" and "micro cell base station controller managing said micro cell base station", and a mobile switching center 3 (see column 3, line 55 – column 4, line 8 and figure 1), which reads on the claimed "mobile service switching center providing circuit switching service for said macro cell base station controller and said micro cell base station controller". When the cell reselection criteria $Sn>0$, and $Qn>Qs+Qoffset+Qhyst$ are fulfilled within timer Treselction the UE 10 makes the cell reselection (see column 5, lines 29-42), which reads on the claimed invention where those mobile stations, communicating with said macro cell base station with a relatively poor communication quality and served for a service time shorter than a preset threshold service time are subjected to an action. Korpela et al fails to expressly disclose the use of diversity.

In a similar field of endeavor, Corbett et al discloses diversity handover communication in a microcell/macro cell case (see column 9, lines 42-61).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Korpela et al with Corbett et al in order to take advantage of the

benefits of diversity handover such as reduced risk of dropped calls, no interruption in speech upon handover and increased gain in downlink signal-to-noise ratio as suggested by Corbett et al (see column 1, line 65 – column 2, line 3).). The combination of Korpela et al and Corbett et al fails to disclose increasing the power of a micro cell base station in response to exceeding a speed threshold.

In a similar field of endeavor, Tsushinmo discloses a system where if the velocity of mobile station exceeds a maximum velocity, the power of a base station is increased (see abstract).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Korpela et al and Corbett et al with Tsushinmo to include the above increasing the power of a base station if the velocity is greater than a threshold in order to reduce the size of the mobile terminal as suggested by Tsushinmo (see advantage).

The combination of Korpela et al, Corbett et al and Tsushinmo discloses the use of a time threshold Treselection (see Korpela et al column 5, lines 29-50), which reads on the claimed "preset threshold service time" and a speed threshold (see Korpela et al column 6, lines 16-22), which reads on the claimed "preset threshold relative traveling speed". The transmit power controller in each base station regularly forwards to the radio network controller 50 periodic measurement report including a radio link transmit power level from the base station and a signal quality indicator from the mobile station (see Corbett et al column 6, lines 49-67), which reads on the claimed "user environment data, obtained by measurement by said macro cell base station and said mobile

station". A difference is calculated between the reference power level and the current

transmit power level (see Corbett et al column 7, lines 1-11), which reads on the

claimed "generating compressed difference data by item-by-item computation of a

difference between each data item of user environment data". Each base station then

calculates an associated correction step delta using the corresponding power level

difference determined for that base station (see Corbett et al column 8, lines 18-29),

which reads on the claimed "compute difference multi-dimensional aggregation data".

The RNC adopts as the reference power level the average transmit power of the

dominant base station, thus updating reference values (see Corbett et al column 8, lines

49-54). The combination of Korpela et al, Corbett et al and Tsushinmo fails to expressly

disclose that the process is performed so as to ensure that a minimum bandwidth is

allocated to all the mobile stations. The combination of Korpela et al, Corbett et al and

Tsushinmo discloses that the transmit power controller in each base station regularly

forwards to the radio network controller 50 periodic measurement report including a

radio link transmit power level from the base station and a signal quality indicator from

the mobile station (see Corbett et al column 6, lines 49-67), which reads on the claimed

"when said aggregation process unit receives the user environment data, said automatic

difference data multi-dimensional aggregation statement generation and execution unit

automatically generates and executes a statement that causes communication to be

established between said macro cell base station and said operation and management

center". A difference is calculated between the reference power level and the current

transmit power level (see Corbett et al column 7, lines 1-11), which reads on the

claimed "said aggregation process unit to generate compressed difference data, based on the user environment data, and to compute difference multi-dimensional aggregation data by performing a multi-dimensional aggregation process on the compressed difference data thus generated". The RNC adopts as the reference power level the average transmit power of the dominant base station, thus updating reference values (see Corbett et al column 8, lines 49-54), which reads on the claimed "the automatic reverse data load program generation and execution unit automatically generates a statement for loading the updated [presets]". The use of a time threshold Treselection (see Korpela et al column 5, lines 29-50), which reads on the claimed "preset threshold service time" and a speed threshold (see Korpela et al column 6, lines 16-22), which reads on the claimed "preset threshold relative traveling speed" is also disclosed. The combination of Korpela et al, Corbett et al and Tsushinmo fails to expressly disclose that the process is performed so as to ensure that a minimum bandwidth is allocated to all the mobile stations.

In a similar field of endeavor, Salonaho discloses a system where thresholds are adjusted in order that the network would not be blocked by handovers (see page 8, lines 12-30), which reads on the claimed "ensure that a minimum bandwidth is allocated to all the mobile stations in the macro cell".

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Korpela et al, Corbett et al and Tsushinmo with Salonaho to include the above threshold adjustments in order to increase network performance by decreasing blocking.

The combination of Korpela et al, Corbett et al, Tsushinmo and Salonaho fails to teach computations occurring in the MSC. Where computations occur is not critical to the invention and the examiner takes official notice that having computations occur in the MSC was well known in the art. It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Korpela et al, Corbett et al, Tsushinmo, and Salonaho so that computations occur in the MSC in order to free up processing power at lower levels.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bryan J Fox whose telephone number is (703) 305-8994. The examiner can normally be reached on Monday through Friday 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on (703) 305-4379. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Marsha D Banks-Harold
MARSHA D. BANKS-HAROLD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

BJF